

## Chapter 4 – Mishap Reporting and Investigating (REDACTED)

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### 4.1 Introduction

#### 4.1.1 Purpose

This chapter sets forth Ames policy for mishap reporting and investigating. The purpose of mishap investigation is to determine the cause(s) so that proper corrective measures can be taken and lessons learned from mishaps can be disseminated to other Ames organizations and other NASA Centers to prevent similar mishaps.

#### 4.1.2 Applicability

This chapter is applicable to all Ames employees, to all work conducted under the authority of Ames, and to all equipment and property managed by Ames. For Ames contractors, it is applicable through their contracts. Non-Ames and non-contractor personnel will follow the provisions of this chapter while at Ames facilities.

#### 4.1.3 Policy

All NASA reportable mishaps (see Definitions that follow) will be investigated and reported in accordance with NASA directive NPG 8621.1.

### 4.2 Mishap Definitions

1. **NASA Reportable Mishap:** An event described in the following five paragraphs unless it involves only off-site contractor personnel and contractor-owned equipment and property.
  - **Type A** - A mishap that causes a death and/or damage to equipment or property equal to or greater than \$1,000,000. A mishap meeting these criteria that results in damage to aircraft or space hardware (i.e., flight and ground support hardware) is included. This definition also applies to a test failure, if the damage was unexpected or unanticipated, or if the failure is likely to have significant program impact or visibility.
  - **Type B** - A mishap that results in the permanent disability of one or more persons; or hospitalization (for other than observation) of three or more persons; and/or damage to equipment or property equal to or greater than \$250,000 but less than \$1,000,000. Mishaps that result in damage to aircraft or space hardware and meets these criteria are included, as is a test failure if the damage was unexpected or unanticipated.
  - **Type C** - A mishap that results in damage to equipment or property equal to or greater than \$25,000 but less than \$250,000; and/or causes occupational injury or illness that results in a lost work day. A mishap that results in damage to aircraft or space hardware and a test failure that meets this criterion are also included.
  - **Mission Failure** - Any mishap (event) of such a serious nature that it prevents accomplishment of most of the primary mission objectives. A mishap of such intrinsic severity that, in the judgment of the Program Associate Administrator, in coordination with the Associate Administrator for Safety and Mission Quality, it prevents the achievement of primary mission objectives as described in the Mission Operations Report or equivalent document.

- **Incident** - A mishap of less than Type C injury, but more than first-aid severity (recordable) and/or property damage equal to or greater than \$1000 but less than \$25,000.
- 2. **Close Call** - An occurrence in which there is no injury or an injury of first-aid severity, no significant equipment property damage (less than \$1000), and no significant interruption of productive work, but which possesses a high potential for any of the mishaps as defined in paragraph 1.
- 3. **Incident Commander** - The individual responsible for the management of all operations at the scene of an emergency incident.
- 4. **Emergency Incident** - A combination of circumstances that calls for immediate action in response to an alarm.
- 5. **Alarm** - An audible or visible signal indicating an off-standard or abnormal condition.
- 6. **Mishap** - An unplanned, undesired event that results in personal injury or property damage.

### 4.3 References

- NPG 8715.3, NASA Safety Manual
- NPD 8621.1 NASA Mishap, and Close Call Reporting, Investigating, and Recordkeeping Policy
- NPG 8621.1, NASA Procedures and Guidelines for Mishap Reporting, Investigating and Recordkeeping

### 4.4 Non-emergency Mishaps

#### 4.4.1 Occupational Injuries or Illness

Occupational injuries that are recordable under occupational injury reporting regulations are reportable as mishaps. Any work-related or injury that requires medical attention greater than first aid is recorded as an Incident. A work-related illness or injury that results in one or more lost workdays after the day of the injury is reportable as a Type C mishap.

When an employee is injured, his/her supervisor is responsible for completing the unshaded portions of a Mishap Report (NASA Form 1627) and submitting the first page to the Safety Division. That first page of the mishap report, or the same information by other means, shall be delivered to the Safety Division within 24 hours after learning of the mishap. Note: Usually a representative of the Safety Division responds to the Ames Health Unit when a patient is being seen for a recordable injury or illness, and gathers the pertinent data at that visit.

Upon completion of the supervisor's investigation of the injury, and within ten workdays, the supervisor is responsible for completing the second part of the Form 1627 and submitting it to the Safety Division.

Any incident that involves a bloodborne pathogen exposure always requires follow-up by the Ames Health Unit.

The supervisor must consult with Ames Health & Safety Manual Chapter 32, Bloodborne Pathogens Protection Plan, for guidance. The information on the form "Exposure Incident Description" should be attached to the initial mishap report. The information on the form "Follow-Up Evaluation of Exposure Incident" should be attached to the final mishap report.

#### 4.4.2 Property Damage Mishaps

Mishaps for which no emergency actions are needed are handled in the same way as those requiring emergency assistance. Personnel must follow applicable portions of the guidance in section 4.5 that follows.

## 4.5 Emergency Incidents that Require Help

### 4.5.1 Responsibilities of Employees

The most capable person at the scene of a mishap that requires emergency assistance acts as the Incident Commander and ensures appropriate emergency response until relieved of this duty by emergency response personnel, a representative of the Safety Division, senior management, the Ames Fire Department, Ames Security Police, or other authorized personnel. All personnel will support emergency response/mitigative actions to the best of their ability, as directed by the Incident Commander.

#### 1. Immediate Action

- Call 9-1-1 from Center phone, or REDACTED
- (Dialing 911 from a non-Ames phone or cellular phone will result in your being connected to an offsite 911 system and could delay the response.)
- State that there is an emergency.
- Describe location (building, room, area, etc.)
- Identify yourself and your phone number.
- Identify the type of emergency — medical, fire, security, toxic spill, etc.
- Say how many people need help.
- Describe the current situation.
- Stay on the phone until you are released. Do not be the one to hang up first.

#### 2. Follow-Up Action

- Provide assistance to injured persons.
- If appropriate, take action to limit or prevent further injuries and damage. Follow facility emergency procedures in order to reduce hazardous conditions, as appropriate.
- Identify witnesses and victims.
- Control access and secure the area to stop actions that could hamper or prevent investigation of the mishap.
- Notify division management in accordance with the division's emergency procedures.
- Impound records, data, and similar information for future investigation.
- Do not relinquish control of the accident scene until relieved by an emergency responder, a responsible manager, or an Ames Police Officer.

#### 3. Offsite Mishaps

Take appropriate emergency action as described above. Work with local officials and emergency response personnel in accordance with emergency response plans. As soon as conditions permit, call the Ames Security Dispatch at REDACTED and notify the emergency operator of the mishap. Immediately report all work-related injuries/illnesses to your supervisor and to the Ames Health Unit.

### 4.5.2 Responsibilities of Emergency Responders

In addition to any of the previously listed actions that still need to be taken, emergency responders must preserve the accident scene, consistent with safety, for the impending investigation. In addition, responders should maintain control of the scene until relieved by a member of the Safety Division, another emergency responder, an assigned accident investigator, or the Ames Police.

### 4.5.3 Responsibilities of Facility Managers

Directors or managers of facilities in which a mishap has occurred must cooperate with emergency responders and investigators in the control of the accident scene, the identification and interview of witnesses, and where necessary, the impoundment of records and collection and analysis of recorded information to facilitate the investigation.

#### **4.5.4 Responsibilities of Ames Security Dispatch**

Immediately after requesting the appropriate emergency response, the Ames Security Dispatch will notify the cognizant supervisor, assigned Safety Division personnel, and other appropriate personnel (per the emergency call list).

#### **4.5.5 Responsibilities of Contractors**

Contractors shall investigate all contractor mishaps that do not involve NASA property or civil servants. A copy of the report shall be forwarded to the Safety Division within 10 days unless approved otherwise by the Safety Division. Report injuries electronically at <http://Q> on NASA Form 1627, Mishap Incident Report.

If NASA and a contractor or resident agency conduct separate but parallel investigations of the same mishap, the two investigators or boards are encouraged to share fact-finding, data, and evidence. However, when it comes to deliberation of conclusions and cause(s), each investigator or board shall act independently of the other. No parallel investigation will be allowed to impede a NASA investigation. Contractors will cc a copy of ARC 15, Contractor Monthly Accident Report to the Safety Division monthly.

### **4.6 Mishap Investigation & Reporting**

#### **4.6.1 The Investigator**

If no emergency responders are on the scene, the responsible supervisor or assigned safety representative initiates an investigation. If an emergency response has occurred, the emergency responder maintains control of the mishap scene and may proceed with the investigation until relieved by the Safety Division representative, or a specifically designated Mishap Investigation Board or Investigator.

Note: The Ames Center Director is the appointing authority for the Type B mishaps and for Type A mishaps when so designated.

An onsite investigator has the authority to take all appropriate measures to ensure that a proper, complete, and timely investigation is completed.

The investigator will complete the following as appropriate:

1. Safeguard the site of the mishap until all appropriate physical evidence can be obtained and preserved. Security provides assistance, as directed by the investigator.
2. Identify witnesses and victims and take their statements.
3. Ensure that appropriate photographs of the mishap site are obtained. An Ames photographer, under the direction of the investigator, normally does this.
4. Complete and submit an initial report of the mishap on a NASA Form 1627. Initial reports must be submitted to the Safety Division within 24 hours of the mishap.
5. Complete a formal investigation report (Type A or B) in accordance with guidance in NPG 8621.1, and submit it to the appointing authority.
6. Complete a formal investigation report (Type C, when requested) in accordance with guidance provided by the appointing authority.

The membership of a formal mishap investigation board (A or B) does not include anyone from the organization responsible for the mishap, unless required for expertise.

The organization responsible for the mishap is responsible for the cost of the investigation.

All mishap reports, both Forms 1627 and formal reports, shall include the investigator's best estimate of the dollar value of damage resulting from the mishap.

#### 4.6.2 Safety Office

1. A Safety Office on-call representative responds to each mishap as necessary to be a focus of Safety Office support and provide immediate technical expertise as appropriate. The Safety Office representative shall:

Determine the mishap type (see definitions in section 4.2 of this chapter or NMI 8621.1, "Mishap Reporting and Investigating"). If a Type A or B mishap, the Safety Division notifies the Deputy Director or Director, the Public Information Officer, and the NASA Safety Division at Headquarters. The Safety Division submits a Telephone Initial Mishap Report (NASA Form 1627A) within 24 hours of the mishap (except as stated below).

For Type A mishaps involving a fatality, or Type B mishaps involving the hospitalization of three or more NASA employees (or a combination of three NASA and non-NASA personnel), notification to NASA Headquarters Safety Division must be made within a few hours to support Headquarters notification to Federal OSHA within 8 hours.

The following telephone numbers are available for these calls:

- M-F, 8 am to 5 pm EST — REDACTED (Safety Division Chief Office)
- M-F, 5 pm to 8 pm EST — REDACTED (Safety Division Chief Mobile)
- M-F, back-up number — REDACTED (Safety Program Manager)
- Off-shift — REDACTED

For events involving Weapons of Mass Destruction anytime — REDACTED

2. Ensure that reporting requirements of this chapter are met and that a proper investigation is conducted in accordance with applicable regulations and standards.
3. Verify that appropriate measures have been taken, or are taken, to secure the mishap scene to protect personnel from the hazards and to preserve evidence for the investigation.
4. Assure that appropriate defensive and offensive measures have been taken, or are taken, to protect life/health, the environment, and property.
5. Notify appropriate Organizational Director(s).
6. Input information from mishap reports into the Incident Reporting and Information System (IRIS), the NASA agency-wide mishap reporting database. This database is hosted by Headquarters and provides a means for exchanging mishap information with the other NASA centers. The information is used to analyze trends and disseminate lessons-learned information for prevention of future mishaps.

The Safety Office typically provides the following additional support to investigation boards and committees:

1. System safety support
2. Direct consulting services
3. Tracking of corrective actions
4. Trending and analysis of mishap causes
5. Advise and consult with the Center Director on staffing of investigation boards

The Safety Office also distributes a summary of each major mishap report, including findings and recommendations, to all Ames staff to whom the lessons could be of value.

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## 4.7 Appendix A: Mishap Responsibilities and Timeline

Action	By Whom	When
Report to Ames Health Unit	Employee	As soon as able after a nonemergency illness or injury
Dial 9-1-1/Ames Security Dispatch for immediate response	Supervisor or eyewitness to an emergency mishap	Immediately
Notify Ames Health Unit (if medical emergency)	Ames Security Dispatch	Immediately
Emergency treatment	Health Unit physician, ambulance crew, paramedics	Immediately
Notify Safety Office & supervisor (Type A, B, & C mishaps)	Ames Security Dispatch and/or Ames Health Unit	Immediately
Assume control of mishap scene (if applicable)	Cognizant supervisor, designated representative, emergency responder	ASAP
Notify Director and HQ / Code QS (Type A, B, and Mission Failure mishaps)	Safety Office representative	ASAP
Notify Public Affairs Director (if applicable)	Center Director (or, as delegated, Safety Office)	ASAP to 3 days
Initiate conference for investigation board appointment (Type A & B, & sometimes C)	Appointing Official (HQ if Type A; Center Director with HQ concurrence if Type B)	ASAP to 3 days
Send board appointment letters (if applicable)	Appointing official	ASAP to 3 days
Complete a Telephonic Mishap Report, NASA Form 1627A (if HQ notified)	Safety Office representative	+1 day
Completed NASA Form 1627 (unshaded sections) and send to Safety Office	Supervisor	+1 day
Completed Compensation/Insurance Forms CA-1 or CA-2 (Federal employees)	Supervisor	+1 day
Enter data into NASA database	Safety Office representative	+1 to 2 days after receipt
Complete CA-16, sheet 1 (Federal employees)	Ames Health Unit	+2 days
Board convenes (if applicable)	Board chairperson	+3 days
Send interim (2 week) status report to Appointing Official (if applicable)	Board chairperson	+3 to 5 days, then every two weeks
Complete NASA Form 1627, follow-up report	Supervisor	+10 days, or on employee's return to work
Report to Ames Health Unit	Employee	On employee's return to work

Action	By Whom	When
Complete Form ARC 215 Medical Disposition	Ames Health Unit physician	On employee's return to work
Verify corrective actions implemented (if no board investigation)	Safety Office representative	Prior to close-out

**Note:** All remaining steps are applicable only if mishaps have a board investigation.

Action	By Whom	When
Send undated board report (all volumes) to Appointing Official	Board Chairperson	+60 days
Accept or reject report	Appointing Official	+80 days
Develop formal Corrective Action Plan	Appointing Official/board	+80 days
Forward 15 copies of report and CA Plan to Director/QS	Appointing Official	+80 days
Concur and date report	Director/QS	+105 days
Dismiss board, publish and distribute report	Appointing Official	+145 days
Enter appropriate final mishap information into NASA Incident Reporting Information System (IRIS) database Safety	Office representative	+160 days

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